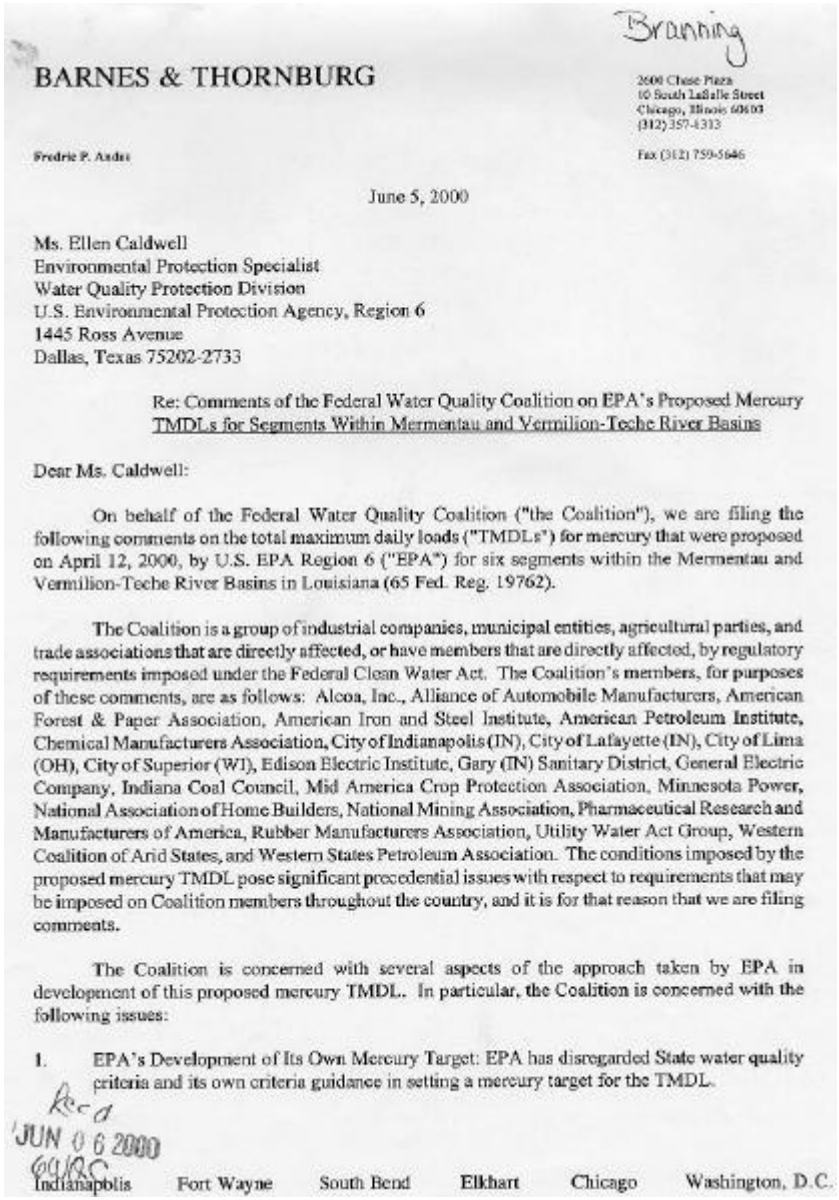

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June 5, 2000

Ms. Ellen Caldwell
Environmental Protection Specialist
Water Quality Protection Division
U.S. Environmental Protection Agency, Region 6
1445 Ross Avenue
Dallas, Texas 75202-2733

Re: Comments of the Federal Water Quality Coalition on EPA's Proposed Mercury TMDLs for Segments Within Mermentau and Vermilion-Teche River Basins

Dear Ms. Caldwell:

On behalf of the Federal Water Quality Coalition ("the Coalition"), we are filing the following comments on the total maximum daily loads ("TMDLs") for mercury that were proposed on April 12, 2000, by U.S. EPA Region 6 ("EPA") for six segments within the Mermentau and Vermilion-Teche River Basins in Louisiana (65 Fed. Reg. 19762).

The Coalition is a group of industrial companies, municipal entities, agricultural parties, and trade associations that are directly affected, or have members that are directly affected, by regulatory requirements imposed under the Federal Clean Water Act. The Coalition's members, for purposes of these comments, are as follows: Alcoa, Inc., Alliance of Automobile Manufacturers, American Forest & Paper Association, American Iron and Steel Institute, American Petroleum Institute, Chemical Manufacturers Association, City of Indianapolis (IN), City of Lafayette (IN), City of Lima (OH), City of Superior (WI), Edison Electric Institute, Gary (IN) Sanitary District, General Electric Company, Indiana Coal Council, Mid America Crop Protection Association, Minnesota Power, National Association of Home Builders, National Mining Association, Pharmaceutical Research and Manufacturers of America, Rubber Manufacturers Association, Utility Water Act Group, Western Coalition of Arid States, and Western States Petroleum Association. The conditions imposed by the proposed mercury TMDL pose significant precedential issues with respect to requirements that may be imposed on Coalition members throughout the country, and it is for that reason that we are filing comments.

The Coalition is concerned with several aspects of the approach taken by EPA in development of this proposed mercury TMDL. In particular, the Coalition is concerned with the following issues:

1. EPA's Development of Its Own Mercury Target: EPA has disregarded State water quality criteria and its own criteria guidance in setting a mercury target for the TMDL.

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6Q/RC

Indianapolis Fort Wayne South Bend Elkhart Chicago Washington, D.C.

This is a response to comments on the February 29, 2000 draft TMDL report "Mercury TMDLs for Segments Within Mermentau and Vermilion-Teche River Basins." Below is a summary of the changes made in finalizing the TMDL report and responses to comments received from the Louisiana Department of Environmental Quality (LDEQ, letter dated May 31, 2000) and the law firm Barnes and Thornburg (letter dated June 5, 2000).

Summary of Changes in the Revised Mercury TMDLs

The changes made to the revised TMDLs are presented below. Some of the changes were in response to comments, while others were made to improve the technical aspects, and readability of the document:

1) The calculation of existing and target wet deposition loads take into account the recent quarterly data collected under the Mercury Deposition Network Program (MDNP), thereby updating the previous estimate. The previous target was 12.3 $ng/m^2/d$, and the revised loading rate is 11.4 $ng/m^2/d$.

2) Point source loading rates were estimated using data from the Permit Compliance System (PCS).

3) Wasteload Allocations (WLA) were revised from application of the Louisiana water quality standards end-of-pipe to addressing only those dischargers with "reasonable potential" to exceed water quality standards. The WLA factors in a target protective of human health, receiving water dilution, background ambient concentration, discharge flow and discharge concentration.

4) Existing and targeted loads were calculated based on the atmospheric loading rates and discharger flows. Watershed drainage areas established by LDEQ for each basin were used in this calculation.

5) Language addressing the "fishable" use from recent EPA guidance was added to address the comment contesting the fact that fish advisories represent a use impairment. Also, a screening value developed using EPA guidance was included to support the fish tissue target utilized in the TMDLs.

6) A table with existing and targeted loads was included for easy reference and to clarify point versus nonpoint pollutant contributions (see executive summary and table 4).

7) Data were obtained from the EPA Toxics Release Inventory and the Louisiana Toxic Emission Data Inventory (TEDI) and tabulated (see tables 5 and 6) to provide information on significant sources in the local airshed.

8) Pollutant sources are briefly discussed in a new section (section 5).

9) Various sections in the TMDL documents were reorganized.

10) A number of editorial changes and corrections of typographical errors were made to the document.

2. Calculation of EPA's Mercury Target: EPA's target for the TMDL is based on legally and technically invalid assumptions.

3. Effluent Limits on Point Sources: EPA improperly imposes loading reduction burdens on point sources, even though those reductions are not needed to attain standards.

Each of these comments is explained in more detail below.

1. EPA's Development of Its Own Mercury Target

EPA has proposed a mercury target, expressed as a fish tissue concentration, of 0.4 ppm, which is inconsistent with and more stringent than Louisiana's and EPA's water quality criteria for mercury.[1] Louisiana's mercury water quality criteria are 12 ng/l for freshwater and 25 ng/l for marine waters. EPA's recommended standard in its 1984 Ambient Water Criteria for Mercury and 1992 National Toxics Rule also is 12 ng/l. EPA #440/5-84-026 and 57 Fed. Reg. 60848. Yet, in this proposed TMDL, EPA preempts the State criterion and ignores its own standard, and instead develops its own fish tissue target of 0.4 ppm, based on its interpretation of the State's narrative standards.

In support of its decision, EPA states that "significant bioaccumulation is possible at concentrations below the water quality criterion." (emphasis added) As a result, according to EPA, "elevated tissue mercury concentrations" can serve as "a surrogate of the mercury water quality standard." However, EPA has no authority to adopt and implement a "surrogate water quality standard" through its development of a TMDL, without going through the process for setting a new water quality standard. Section 303(c)(4) of the Clean Water Act sets forth the appropriate procedure that EPA must use to declare a State standard inadequate; if the State does not make appropriate revisions, EPA then can issue a new standard for the State. Since EPA has not followed this procedure, the Agency must use Louisiana's legitimately derived and appropriately approved, existing criterion of 12 ng/l.

2. Calculation of EPA's Mercury Target

EPA states that its mercury target of 0.4 ppm in fish tissue is based on the State's trigger level of 0.5 ppm for issuance of a fish consumption advisory, with a 20% adjustment for a "margin of safety." EPA bases the TMDL on a declaration that the "fishable" use is not being met if either

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[1]EPA's target is phrased in terms of parts per million mercury in fish tissue, and is based on the fish tissue levels used to set the State's fish consumption advisories. In contrast, the State's standards are phrased in terms of levels of mercury in the water column, specifically nanograms of mercury per liter of water, and have been set through the State's rulemaking process for issuing water quality standards. When converted to common terms (either fish tissue or water column levels) and compared, the EPA TMDL target is significantly lower (i.e., more stringent) than the State water quality standards.

Responses to Barnes & Thornburg comments:

1) This comment asserts that EPA has developed its own mercury target and has disregarded state and EPA guidance in this process.

The Region disagrees with this assertion. The approach utilized represents implementation of the narrative state water quality standards and is based on procedures routinely used by the state of Louisiana, and thus, is supportable.

First, Louisiana does not presently have mercury water quality standards for the protection of human health. The criteria of 12 ng/l for freshwater and 25 ng/l for marine waters are aquatic life criteria, rather than criteria to protect human health. The state has not yet adopted water quality criteria for the protection of human health in its water quality standards. Available data from the Savannah River system, Georgia (EPA Region 4 2000) and the Florida Everglades (EPA Region 4 1996) have demonstrated that these criteria are not stringent enough to protect human health and that significant bioaccumulation occurs at ambient water concentrations of 4 ng/l or less. The water target for the Savannah River TMDL is 2.83 ng/l (EPA Region 4 2000). For the Great Lakes system, the water quality criterion established for protection of human health is 1.3 ng/l (EPA 1999). Because Louisiana has not yet adopted human health water quality standards, which address the bioaccumulation and biomagnification of mercury up the food chain, Region 6 is utilizing fish tissue as a direct indicator of bioaccumulation and human health risk. The EPA Office of Water has developed a human health criteria guidance document for mercury. The agency's technical approach was to establish a criterion for tissue and then recommend biaccumulation factors applicable to particular water body types which can be applied to derive water quality criteria (EPA 2001). For these reasons, use of the state's existing water quality standards (and the EPA 1984 water quality criteria; see EPA (1985)) for aquatic life are inappropriate for use in protecting human health, particularly in light of new information on the toxicity of mercury (NAS 2000) and its strong bioaccumulative tendency.

Secondly, the target established is a direct implementation of the narrative water quality standards. The Louisiana Department of Health and Hospitals utilizes a risk based procedure to determine when fish consumption advisories are warranted. Advisories are triggered at a fish tissue concentration of 0.5 ppm mercury, wet weight. Since this level triggers an advisory action, a level of less than 0.5 ppm is required to attain the narrative water quality standard. A margin of safety (MOS) is a required component of the TMDLs. Based on the need to achieve a fish tissue level below the trigger level, and the need to incorporate a MOS, the target of 0.4 ppm mercury, wet weight, was established. The use of this target level is consistent with the state's policies and procedures related to the protection of human health. Another advantage to the use of a tissue target is that there is ample fish tissue data available for assessing the narrative standard, and monitoring is expected to continue on an ongoing basis.

of two conditions is satisfied: (1) fish and wildlife propagation is "impaired," or (2) there is "significant human health risk from consuming fish or shellfish resources." EPA then makes the assumption that any water with a fish consumption advisory does not meet the "fishability." test, which is extremely vague. EPA cites no authority for these new regulatory policies, and no technical support for its assumptions. The fact that a waterbody is covered by a fish consumption advisory is not sufficient to support a conclusion that the water body is impaired. The Clean Water Act states as follows: "Each state shall identify those waters within its boundaries for which the effluent limitations required by [Clean Water Act sections] 301(b)(1)(A) and 301(b)(1)(B) are not stringent enough to implement any *water quality standard* applicable to such waters." Clean Water Act, section 303(d)(1)(A) [emphasis added]. Without objective demonstration that such a standard has been violated, the waterbody should not be listed, and a TMDL is not required.

There are several reasons why the existence of a fish advisory should not automatically lead to placing a water on the 303(d) List and developing a TMDL. Perhaps most importantly, fish advisories are a very imperfect tool for judging whether water quality is truly impaired. They are generally issued by State health departments, without any process for public input, and often without any formal criteria for data quantity, quality or validity. In fact, these advisories are often issued based on data that would not otherwise be sufficient for developing the 303(d) List. In many cases, the advisory is issued only for informational purposes, to trigger further investigation, or is issued on a cautionary basis, when fish tissue levels of a substance do not yet pose a significant risk but are worthy of some attention. The advisory will often list a number of substances that are covered, without identifying the extent to which any particular substance is actually responsible for the asserted risk. Also, in some States, fish advisory levels have been set lower than natural background levels, especially for mercury. This could result in the listing of water bodies as impaired based solely on naturally occurring mercury levels. For all of these reasons, it is simply improper to presume that a water body that is listed in a fish advisory is impaired, and that a TMDL is required.

In addition to being improper, EPA's listing (and development of TMDLs) based on fish advisories is also legally unauthorized, since it violates the Administrative Procedure Act's rulemaking requirements. Recent legal authority makes it clear that EPA cannot use subjective measures (such as fish advisories) to list waters and develop TMDLs. In the case of Western Carolina Regional Sewer Authority, et al. v. DHEC, et al. (Docket Nos. 98-ALJ-07-0267-CC and 98-ALJ-07-0585-CC, September 22, 1999), it was held that the use of the Trophic State Index (TSI) to place South Carolina water bodies on the Clean Water Act Section 303(d) impaired waters list as nutrient impaired and/or aquatic life-use impaired constituted a "binding norm" and therefore should have been promulgated as a regulation pursuant to the Administrative Procedures Act. South Carolina was found to have exceeded its authority in using the TSI as the *sole* measure of whether a water body would be listed as aquatic life-use impaired. Contrary to the State's assertion that it was a mere tool, the court ruled that it was in fact applied as a binding norm and a *de facto* numeric criterion. Similarly, in Simpson Tacoma Kraft v. Dept. of Ecology, 119 Wash 2nd 640, 835 P. 2nd 1030 (Wash. 1992) the Washington State Supreme Court rejected Washington Department of Ecology's attempt to translate narrative WQS into a numeric limit without going through the proper rulemaking procedures. The same principle would apply to the use of fish consumption advisories as a criterion for listing waters and developing TMDLs: since the advisory is not a water quality standard, but is nevertheless being applied as a "binding norm" and as a "de facto numeric criterion,"

2) The commenter believes that EPA's target is based on technically invalid assumptions and is legally unauthorized.

The Region, as discussed in previous comments and further discussed below, disagrees with this opinion. As indicated above, because of the lack of state human health water quality standards, the Region has implemented the state narrative standard, utilizing a fish tissue level of 0.5 ppm, with a margin of safety, resulting in a target of 0.4 ppm. A concentration of 0.5 ppm or higher triggers issuance of fish consumption advisories (LDEQ 1998; Dr. William Hartley, Tulane University, personal communication). At this concentration there is significant risk to children and women which may be of child-bearing age, which are pregnant or are nursing. The developing fetus is particularly sensitive to the neurotoxic effects of methyl mercury (see FDA 1995). Louisiana's policy is not as conservative as those used in some other states. For example, the state of Georgia uses an action level of 0.23 ppm mercury, wet weight, for triggering an advisory.

As an additional step, the report was revised to include a fish tissue screening value calculated using EPA's guidance for assessing chemical contaminant data for use in fish advisories (EPA 1995, p. 5-3). This affords a mechanism to assess and/or verify the technical appropriateness of the target tissue value. Assuming a consumption rate of 20 grams per day (0.02 kg/d, the assumed consumption rate for Louisiana's human health water quality standards), a body weight of 70 kg, and the EPA reference dose (RfD) of 0.0001 mg/kg/d, and utilizing the equation of SV_n = (RfD * BW)/CR, a non-carcinogenic screening value (SV_n) of 0.35 ppm wet weight is obtained. This screening value is consistent with the target applied for the TMDLs (rounded to 0.4 ppm). The above RfD is supported by the recent National Academy of Sciences toxicological assessment of mercury (NAS 2000). The NAS study upheld EPA's original recommendation of 0.0001 mg/kg/d. This RfD is also used by the Louisiana Department of Health and Hospitals in deriving consumption advice for children and women of child-bearing age (Dr. William Hartley, Tulane University, personal communication). Additional language to further justify the target endpoint has been added to the document.

The commenter argues that "The fact that a waterbody is covered by a fish consumption advisory is not sufficient to support a conclusion that the waterbody is impaired." Guidance issued October 24, 2000 by the EPA Office of Science and Technology and Office of Wetlands, Oceans and Watersheds states that "EPA generally believes that fish and shellfish advisories...demonstrate an impairment of the CWA section 101(a) "fishable" use. This applies to fish and shellfish consumption advisories and certain shellfish area classifications for all pollutants that constitute potential risks to human health, regardless of the source of the pollutant...for purposes of determining whether a water body is impaired and should be included on a section 303(d) list...". The guidance further states that " EPA considers a fish advisory,...and supporting data, to be readily available data and information that demonstrates non-attainment when...the risk assessment parameters (e.g., toxicity, risk level, exposure duration and consumption rate) are equal to or less protective than...water quality standards." This interpretation holds for waters listed for mercury in Mermentau and Vermilion-Teche basins since the state has not yet adopted numeric mercury water quality standards for protection of human health. The above language was included in the revised TMDL document to reflect EPA's interpretive guidance.

EPA is violating the Administrative Procedure Act by using the advisory to set the TMDLs for the Mermentau and Vermilion/Teche basins.

3. Effluent Limits for Point Sources

In the proposed TMDL document, EPA explains that "the state believes that atmospheric deposition is the predominant source of mercury" to the segments that are the subject of the TMDLs. Based on that statement, EPA calculates reductions in atmospheric loadings that will bring about the needed reductions in fish tissue levels.[2] Logically, this should mean that point sources of wastewater should not need to reduce their discharges at all, since the standard will be attained by other means.[3] However, EPA instead requires every point source to comply with a wasteload allocation equal to the water quality standard, to be met at the end-of-pipe. This is more stringent than necessary to achieve the TMDL's goal, and should not be mandated. In fact, EPA itself has followed a more logical approach in setting a mercury TMDL, for New York/New Jersey Harbor. 62 Fed. Reg. 1930 (January 24, 1996). In that TMDL process, EPA determined that the load attributable to air emissions "drives exceedances of water quality standards." After assessing the loading reductions that would result from implementation of Clean Air Act requirements to control those mercury air emissions, EPA determined that no reductions in loadings from existing wastewater point sources were necessary, and the TMDL simply froze those sources at their existing mercury discharge levels. There is no reason that this approach could not be used for the Mermentau/Vermilion-Teche TMDLs as well. Where the source of impairment is attributable to air deposition, as is the case here, EPA should authorize a phased TMDL that does not impose load reductions on point sources, but rather takes account of atmospheric load reductions that eventually may be achieved through implementation of programs under the Clean Air Act or other programs that may be developed to reduce loadings from those sources of pollutants.

We appreciate the opportunity to provide these comments on EPA's proposed mercury TMDLs. Please feel free to give me a call (312/214-8310) if you have any questions.

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[2]It should be noted that we have not included comments on the specific technical assumptions and calculations that were performed by EPA to estimate mercury fate and transport, including bioaccumulation factors, since those did not have a direct impact on the proposed limits for point sources. The Coalition reserves the right to submit additional comments on these issues at a later time, particularly if at any point those technical assumptions and calculations become relevant to derivation of discharge limits.

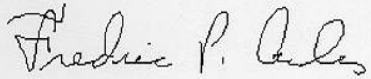
[3]Where, as here, EPA has determined that point source contributions are negligible, imposition of stringent effluent limits is contrary to the Act itself. Section 301(b)(1)(C) calls for issuance of water quality-based effluent limits (WQBELs) that are "necessary to meet water quality standards." In the case of this proposed mercury TMDL, in which the load reductions "necessary to meet water quality standards" have been identified as coming from other sources, there is no legal basis for imposing WQBELs on the point sources.

EPA believes that the case law cited by the commenter is neither binding upon or analogous to the situation addressed in these TMDLs.

3) The commenter disagrees with the wasteload allocation in which point source discharges would be expected to meet state water quality standards at the end-of-pipe.

EPA acknowledges that the relative contribution of point sources is small compared to atmospheric deposition. The relative contribution of point sources is quantified in the revised TMDLs. Approximately 0.6% and 1.5% of the total existing mercury load is contributed by point sources in the Mermentau and Vermilion-Teche basins, respectively. EPA believes that wet deposition of mercury is the most significant factor contributing to the mercury bioaccumulation. While EPA believes CAA regulatory controls will be the most important mechanism to reduce atmospheric mercury loads, the potential exists for point source discharges to contribute to the observed bioaccumulation on a localized, site specific basis. The TMDLs require monitoring of discharges having the potential to discharge mercury. Mercury loading of facilities will be controlled through permit limits or implementation of a mercury minimization plan, as has been proposed by EPA Region 4 (see EPA Region 4 2000). These allocations would be derived using a water quality criterion, standard or other target protective of human health, discharge concentration, discharge flow, instream flow, and background ambient water concentrations. Regulations at 40 CFR Part 122.44(d)(1) require permitting authorities to determine "whether a discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above a narrative or numeric criterion with a state or tribal water quality standard," and to develop water quality-based NPDES permits accordingly.

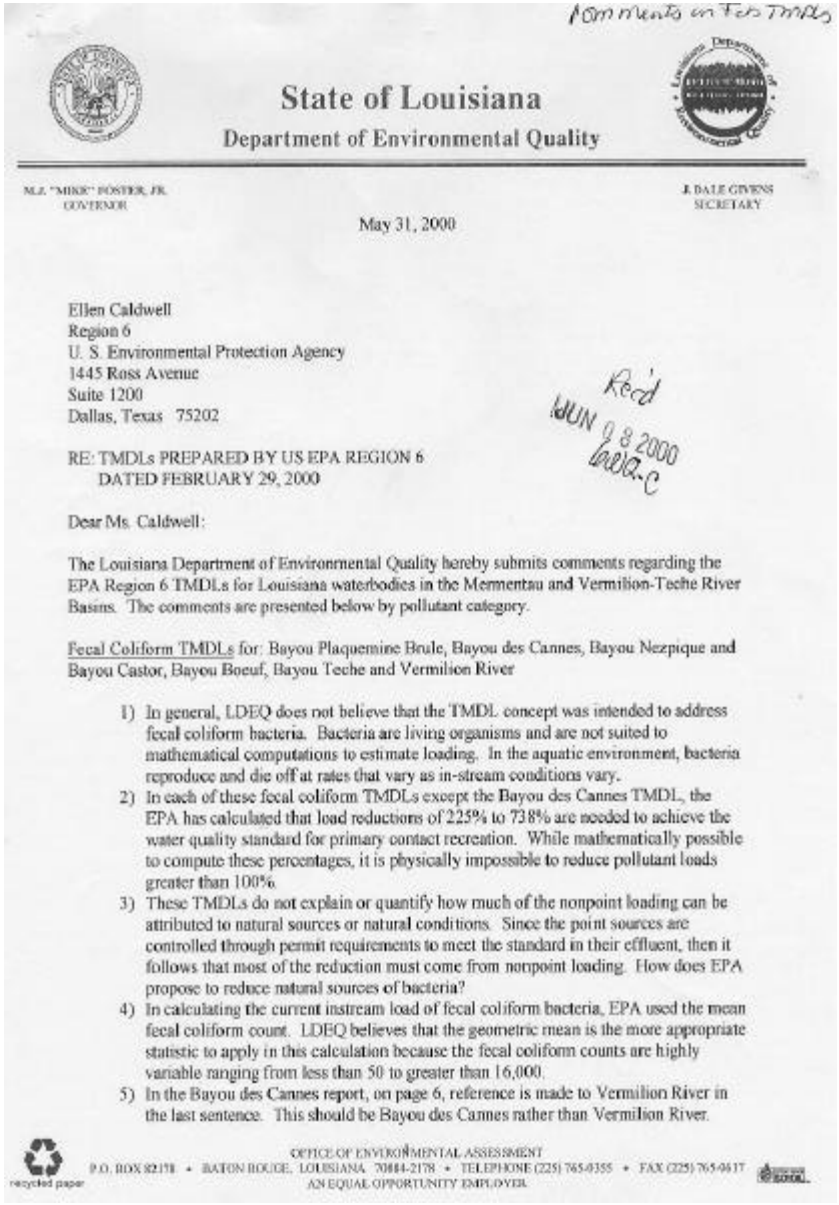
Sincerely,



Fredric P. Andes

cc: Members of the Federal Water Quality Coalition

Response:



Comments on Fec TMDLs

State of Louisiana

Department of Environmental Quality

M.J. "MIKE" FOSTER, JR.
GOVERNOR

J. DALE GIVENS
SECRETARY

May 31, 2000

Ellen Caldwell
Region 6
U. S. Environmental Protection Agency
1445 Ross Avenue
Suite 1200
Dallas, Texas 75202

Rec'd
JUN 8 2000
LaDEQ-C

RE: TMDLs PREPARED BY US EPA REGION 6
DATED FEBRUARY 29, 2000

Dear Ms. Caldwell:

The Louisiana Department of Environmental Quality hereby submits comments regarding the EPA Region 6 TMDLs for Louisiana waterbodies in the Mermentau and Vermilion-Teche River Basins. The comments are presented below by pollutant category.

Fecal Coliform TMDLs for: Bayou Plaquemine Brule, Bayou des Cannes, Bayou Nezpique and Bayou Castor, Bayou Boeuf, Bayou Teche and Vermilion River

1) In general, LDEQ does not believe that the TMDL concept was intended to address fecal coliform bacteria. Bacteria are living organisms and are not suited to mathematical computations to estimate loading. In the aquatic environment, bacteria reproduce and die off at rates that vary as in-stream conditions vary.
2) In each of these fecal coliform TMDLs except the Bayou des Cannes TMDL, the EPA has calculated that load reductions of 225% to 738% are needed to achieve the water quality standard for primary contact recreation. While mathematically possible to compute these percentages, it is physically impossible to reduce pollutant loads greater than 100%.
3) These TMDLs do not explain or quantify how much of the nonpoint loading can be attributed to natural sources or natural conditions. Since the point sources are controlled through permit requirements to meet the standard in their effluent, then it follows that most of the reduction must come from nonpoint loading. How does EPA propose to reduce natural sources of bacteria?
4) In calculating the current instream load of fecal coliform bacteria, EPA used the mean fecal coliform count. LDEQ believes that the geometric mean is the more appropriate statistic to apply in this calculation because the fecal coliform counts are highly variable ranging from less than 50 to greater than 16,000.
5) In the Bayou des Cannes report, on page 6, reference is made to Vermilion River in the last sentence. This should be Bayou des Cannes rather than Vermilion River.

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Responses to LDEQ comments:

Fecal Coliform TMDLs

1) We appreciate the comment. However, EPA is required under CWA 303(d) to develop total maximum daily loads for those pollutants which do not meet applicable water quality standards. Levels of fecal coliform bacteria in the above-stated water bodies were found to be in exceedance of State established criteria and, as such, must be reduced by those amounts described in each TMDL so as to meet such criteria. These TMDLs are based on all available data and are the best estimate of bacterial loading based on such data.

2) In each of these draft fecal coliform TMDLs, the percent load reduction was calculated by dividing the load reduction by the TMDL and then multiplying by 100. For example, in the fecal coliform TMDL for the Vermilion River (subsegments 060801 and 060802) during the months of May through October, the load reduction was 2.15 E13 cfu/day and the TMDL was calculated as 2.93 E12 cfu/day. Based on these values, the percent load reduction was calculated to be:

(2.15 E13 / 2.93 E12) (100) = (7.33) (100) = 733%

In these, as well as all subsequent TMDLs, EPA has recalculated the percent load reduction by expressing the load reduction as a percentage of the current load. As an example, in the above-mentioned TMDL, the percent load reduction was re-expressed based on the current load (2.44 E13) and the load reduction (2.15 E13) needed to meet the TMDL:

(2.15 E13 / 2.44 E13) (100) = (0.88) (100) = 88%

No loads were recalculated in the final fecal coliform TMDL documents. Only the percent load reduction expression was amended to more clearly state the level of reduction necessary to meet the TMDL target.

3) These TMDLs are based on all available data and are the best estimate of bacterial loading based on such data. This data did not differentiate between natural sources and anthropogenically derived sources of bacterial pollutants. Careful consideration of sources, and targeting of these sources for treatment, will take place during the implementation phase of these TMDLs.

4) The geometric mean is recommended when assessing against the 200cfu/100ml criterion when at least 5 samples are collected during a 30 day period to represent the exponential bacterial growth and die-off cycle. In the case of these TMDLs, the individual data points were assessed against the 400cfu/100ml criterion to determine the percentage of exceedances as only one or two samples per month were collected. Since only one or two samples were collected per month, it was determined to apply the arithmetic mean as opposed to the geometric mean to calculate the current in-stream loads. In general, the use of the arithmetic mean is more conservative than using the geometric, or harmonic, mean. Using the geometric mean based on one or two samples per month over a 12 month period could underestimate the current in-stream loads. To reduce uncertainty, we have used a conservative estimate for the current in-stream load.

5) The described correction has been made to the stated TMDL report.

6) In the Bayou Plaquemine Brule report, on page 4, there is reference to Vermilion River in first sentence of section 2.3. This should be Bayou Plaquemine Brule.
7) In the Bayou Plaquemine Brule report, on page 4, the second sentence in the last paragraph regarding nonpoint sources should be deleted. This is not true for the Plaquemine Brule watershed. The Bayou Plaquemine Brule watershed is dominated by rice fields and some row crops. The rice fields are a source of fecal coliform bacteria because they are utilized by waterfowl during the fall and winter.
8) In the Bayou Plaquemine Brule report, on page 7, there are two references to Vermilion River which should be replaced with Bayou Plaquemine Brule.
9) In the Bayou Nezpique report, on page 9, there is a reference to Vermilion River which should be replaced with Bayou Nezpique.
10) In the Bayou Boeuf report, on page 8, there is a reference to Vermilion River which should be replaced with Bayou Boeuf.

Mercury TMDLs for Calcasieu and Ouachita River Basins

1) These six subsegment TMDLs are aimed at those waterbodies listed as impaired due to mercury solely because the state of Louisiana has issued fish consumption advisories directing some level of reduced consumption of certain species of fish. LDEQ agrees with EPA that atmospheric contributions of mercury are the most significant sources in Louisiana. It is unclear however, which sources are causing or have caused the fish tissue bioaccumulation concerns in these two river basins.

2) LDEQ is very concerned with the approach that EPA takes to derive the targeted reductions in mercury loading. EPA assumes a "linear relationship between atmospheric loading and subsequent bioaccumulation" in fish tissue to "arrive at a target of three-fold reduction in mercury loading". There is no clear documented relationship between the amount of mercury in edible tissues of fish and how much mercury must be present in the water column or the sediment from whatever source to produce those mercury levels. It is also undocumented as to whether any of the unknown sources of mercury referred to in EPA's TMDLs are ongoing sources or legacy sources of atmospheric deposition.

3) LDEQ would also like to point out that the ambient monitoring network consisting of a 5-year basin cycle does not include the monitoring of fish tissue for mercury. The mercury biomonitoring program is an on-going sampling effort wherein approximately 100 different waterbodies are sampled each year, some of which are new sites and some being re-sampled. Waterbodies that have a fish consumption advisory for mercury are re-sampled at least once a year; one waterbody is sampled seasonally.

4) LDEQ still believes that TMDLs are not appropriate tools for determining and implementing mercury loads confined to state boundaries. Developing TMDLs for subsegments to control atmospheric deposition will not effectively assure reductions. While this "piecemeal" approach will satisfy EPA's immediate need to develop TMDLs according to a court-ordered schedule, it will not provide timely attainment of water quality standards related to mercury loading and the fish and wildlife propagation use. The appropriate management strategy for this pollutant of concern

Fecal Coliform TMDLs continued

#6 - #10) The described corrections have been made to the stated TMDL reports.

Mercury TMDLs:

Note that LDEQ comments are under the heading of "Mercury TMDLs for the Calcasieu and Ouachita River Basins." We believe the LDEQ's comments were submitted on mercury TMDLs prepared for the Mermentau and Vermilion-Teche Basins of which the state received a copy. To date EPA has not prepared any mercury TMDLs for the Calcisieu or Ouachita River Basins, thus we believe these comments were submitted for the Mermenbau and Vermilion-Teche Basins.

1) The LDEQ commented that it is unclear which sources are causing or have caused the fish tissue bioaccumulation concerns in these two river basins.

In the revised TMDL, EPA included information contained in the EPA Toxics Release Inventory (TRI) and the Toxic Emission Data Inventory (TEDI) managed by the LDEQ. The emissions applicable to the local airshed (extending 100 km around the perimeter of the watersheds) are included. Industrial emissions appear to be a significant source. The inventories do not include data on coal-fired power plants, municipal waste combustors (MWC) and medical waste incinerators (MWI). However, these sectors are believed to have been important sources in the past and, through Clean Air Act (CAA) authority, are presently being regulated. EPA has allocated funding and is receiving contractor assistance to apply the Regulatory Modeling System for Aerosols and Deposition (REMSAD). This is part of an effort by the EPA Office of Water to conduct two TMDL case studies (in Wisconsin and Florida) to develop national guidance. The forthcoming information for Louisiana will be useful in defining sources of mercury which is influencing various watersheds in the state.

2) The state commented that there is no clear documented relationship between the amount of mercury in edible tissues of fish and the amount of mercury in the water column and bottom sediments, and that it was unclear whether sources in these basins are active or are a result of legacy deposition.

The state does not presently have numeric water quality standards for protection of human health. In addition, trace level mercury data for water in these basins is lacking. Without a defensible water target level, and ambient water data, development of the TMDLs using conventional approaches was not possible. The Region decided to utilize a fish tissue based approach to estimate the reductions in mercury loading needed to attain water quality standards. The rationale for taking this approach is based on: (1) the fact that fish tissue is a direct indicator of human health risk from fish consumption; (2) the state Louisiana Department of Health and Hospitals (LDHH) established procedures for assessing risk and has established a "safe level" for triggering fish consumption advisories; (3) the LDEQ had a well developed fish tissue database which could be utilized for this assessment; and (4) the approach was suggested to the Region by the EPA Office of Science and Technology as a rational, supportable approach in light of the lack of national guidance on developing TMDLs.

should acknowledge that fish consumption advisories, public awareness and educational efforts, and continued fish tissue monitoring efforts across the states are the only effective management tools available to individual states.

5) EPA's TMDLs imply that there are sources of mercury in these watersheds, but they do not identify any discreet sources that must be eliminated in order to reduce the bioaccumulative effects of atmospheric deposition. The EPA TMDLs do not acknowledge that natural conditions within each waterbody undoubtedly have a direct impact on the level of mercury accumulations in fish.

6) EPA's mercury TMDLs require that "the state, in conjunction with other stakeholders will develop implementation and monitoring plans for these TMDLs". LDEQ agrees with EPA that attainment will take "several decades". It is unclear how implementation and monitoring plans for these two basins can adequately and by themselves address the mercury bioaccumulation levels in fish species within these basins. EPA fails to identify the appropriate stakeholders to be involved in implementation of these mercury TMDLs.

Turbidity TMDL for Bayou Queue de Tortue

1) The use of the 150 NTUs is consistent with LAC 33:IX.1113.C; LDEQ applied it in Rationale for Re-evaluating TSS, Siltation and Turbidity in the Mermentau and Vermilion-Teche Basins of Louisiana previously submitted to EPA.

2) Even if all NPS (and WLA) sources adhere to the 150 NTU, there is a probability that the number will still be exceeded. This probability cannot be quantified at this time. The "implicit" MOS is probably not meant to cover turbidity due to non-controllable, irreversible hydromodification, naturally dystrophic waters or otherwise "natural sources", even though these components are acknowledged in the TMDL. While it is important to allow flexibility for components that cannot be quantified, this TMDL seems to focus on the anthropogenic NPS, with no allowance for the "natural sources" of suspended sediment.

3) Figure 2. Much of the time, the background in Queue de Tortue is below 150 NTU. 150 NTU is not necessarily "conservative" – see monthly data for July through December in Figure 2. Just something to keep in mind.

4) It is not clear how the turbidity impairment was assessed for the purpose of this TMDL (See third ¶ of the Executive Summary and last ¶ of Section 2.3. For example how many years - period of record was stated as 1978 through 1998 – were used in EPA's assessment)? Did EPA use LDEQ's assessment methodology or their own? If EPA is not using LDEQ's methodology, then that may account for the difference between EPA's assessed 36% exceedences (using period of record – or what?) and LDEQ's 41.5% (probably using most recent 5 years of data) for Queue de Tortue found in the rationale for de-listing White Lake. There is not a big difference between the percentages, and they are both still above the criteria.

The Mercury Study Report to Congress (EPA 1997, p. 3-19) states that "The analysis of mercury fate and transport supports a plausible link between mercury emissions from anthropogenic combustion and industrial sources and methylmercury concentrations in freshwater fish." While the linkage has not been definitively proven, it is plausible and certainly a viable hypothesis. There is not yet national regulation or guidance which prescribes standard TMDL procedures for mercury. The Region feels that national guidance to promote consistency from state to state and basin to basin is needed and should be developed. In the future, the Region hopes to utilize the research currently being carried out, as well as national guidance, which would promote national consistency. At present the states and Regions are initiating TMDL development utilizing a variety of methods. The Region is utilizing a simple yet logical approach to addressing mercury, which has impaired the listed waters, and which has the potential to impair additional waters within these river basins as well other basins in Louisiana.

3) The state commented that mercury in fish is sampled on an ongoing basis, rather than in accordance with the 5-year basin cycle, and that waterbodies with advisories are re-sampled at least once a year.

LDEQ has done an outstanding job in carrying out an ongoing, state-wide mercury fish tissue monitoring program. This state-wide monitoring program was initiated in 1995 as an EPA funded study of selected lakes in the state (LDEQ 1995) and was expanded to include ongoing monitoring of a variety of water bodies in all basins within the state. The Region is pleased with the frequency that the state monitors those waters that have fish consumption advisories. The Region believes that fish tissue monitoring in such affected waters should occur at least every five years, although more frequent monitoring would be beneficial to assess trends in fish tissue mercury levels. More frequent monitoring will more effectively portray status and trends of fish mercury body burdens. We have revised the report to better reflect the state's ongoing program by stating that "periodic re-sampling of the listed waters will be conducted."

4) The LDEQ commented that the approach taken may not be effective since sources outside the state are not addressed and that issuance of fish consumption advisories and continued monitoring and outreach are the only effective management tools available to states.

The Region appreciates the state's concern related to problems with utilizing TMDLs as a mechanism to address mercury releases on a broad scale, nation-wide (and international) fashion. The Region agrees with the far-reaching extent of the problem and the difficulty in identifying sources and assigning loads for an atmospheric pollutant such as mercury. However, where narrative and/or numeric water quality standards are not being attained, TMDLs are appropriate for addressing CWA Section 303(d)-listed waters with demonstrated mercury bioaccumulation concerns in Louisiana as well as in other states. Due to complicating factors, including the multitude of atmospheric sources, the relative influence of local, regional and global sources, the complex fate and effects of mercury, site specific conditions which mediate methylation, etc., TMDLs cannot by themselves solve the mercury problem. The CAA, through Maximum Achievable Control Technology (MACT) standards, will aid TMDL efforts to control mercury sources. TMDLs are a management measure which will compliment other statutes and programs to address this national and global issue. The Region agrees that educating the public and issuing consumption advisories are important measures the states can take to address mercury bioaccumulation, however, these actions are separate from the TMDL process which serves to address pollutant loads.

5) The turbidity TMDL for Bayou Queue de Tortue is applied essentially to NPS. Apparently that is valid in light of the recent ruling on Pronsolino vs. EPA, 3/30/00. How will the NPS component accomplish compliance? As a practical matter was EPA considering implementation in taking the BMP/% reduction approach in this TMDL?

6) Figure 2. The different (higher) reduction required during the seasonally "critical" months is supported by historical data for what period of time? The period of time for Figure 2 data is not stated in the TMDL.

7) Section 3.5. EPA states the MOS is implicit by use of long term ambient data. Is this the norm for parameters in other more conventional TMDLs?

8) Should the calculations and assumptions for the reduction percentages be documented in the TMDL as an appendix?

Vermilion River TMDLS for Dissolved Oxygen and Nitrogen, Subsegments 060801 and 060802

1) Page 1, Executive Summary, third paragraph, last sentence: The nitrogen portion of the TMDL shown for summer is wrong. The correct load is 10,180.5 lbs/day.

2) Page 2, Item 4, Loading Capacity and TMDL Formulation, next to the last sentence: The nitrogen portion of the TMDL shown for summer is wrong. The correct load is 10,180.5 lbs/day.

3) Page 3, Item 6, Wasteload Allocations, last sentence: The nitrogen wasteload allocation shown for winter is wrong. The correct load is 4,872 lbs/day.

4) Page 3, Item 7, Margin of Safety, next to the last sentence: How did you arrive at an overall MOS greater than 10%?

5) Appendix A, "1999 Review and Assessment of the 1987 Vermilion River Watershed TMDL for Dissolved Oxygen", December 1999, LDEQ: The charts showing the 1999 Winter PS Loads were labeled incorrectly. Corrected charts are enclosed for your use.

LDEQ appreciates this opportunity to comment on the TMDLs prepared by Region 6 EPA.

Sincerely,

Barbara Romanowsky

Barbara Romanowsky
Assistant Administrator
Environmental Evaluation Division

5) The LDEQ commented that specific mercury emission sources are not identified and the TMDLs lack acknowledgement of natural conditions which may influence mercury bioaccumulation.

EPA believes wet deposition of atmospheric mercury (primarily from anthropogenic sources) is the primary reason for the observed bioaccumulation. Site specific factors from water body to water body within the two basins mediate the degree of methylation. This explains differences in the degree of bioaccumulation found for various waters. Based on these site specific factors some waters are clearly more vulnerable to atmospheric deposition than others. Mercury sources are located both within and outside these watersheds. Combustion sources outside the watershed (but within the airshed) may influence deposition within the watershed. In the revised TMDL, EPA has included data from the Toxics Release Inventory (TRI) and the state's Toxic Emission Data Inventory (TEDI) to better characterize air sources. However, information is lacking on coal-fired utilities (which are not required to report under TRI) and smaller emission sources such as municipal waste combustors (MWC) and medical waste incinerators (MWI), which collectively may represent a significant contribution of mercury. These sources were addressed in the load allocation portion of the TMDL.

6) This comment questioned whether the monitoring and implementation plans will adequately address mercury bioaccumulation, and indicated that stakeholders involved in implementation are not identified.

The Region understands LDEQ's perspective concerning the difficulty of addressing air releases through TMDLs alone. While TMDLs are measures to address the mercury problem for specific watersheds, other regulatory actions through the CAA will be critical to control air releases. In addition to the Mermentau and Vermilion-Teche basins, TMDLs will eventually be developed for other watersheds in Louisiana as well as surrounding states. The Region envisions a cumulative beneficial effect of TMDLs for multiple basins, and potentially state-wide. The process to control mercury releases will be step-wise and gradual. The stakeholders have yet to be determined, although they will include the state and EPA. EPA also would expect the general public, power utilities and industry to be involved in implementation of the TMDLs. For example, state and local authorities may initiate voluntary collection, recycling or other programs in which citizens could participate. Industries could initiate pollution prevention efforts (such as product substitution). Voluntary programs may be important to compliment regulatory controls which will occur under CAA authority. It should be noted that these TMDLs do not require nor do they include an implementation plan.

Turbidity TMDL for Bayou Queue de Tortue

1) There is no mention of a specific turbidity numeric criterion in LAC 33:IX.1113.C. Table 3 (as referenced in §1113.C) does not include turbidity as an indicator. Having no data to adequately determine background levels of turbidity to set a site-specific guideline, as discussed in LAC 33:IX.1113.B.9.b.vi, EPA deferred to LAC 33:IX.1113.B.9.b.i.and the use of 150 NTUs as a guideline value in the assessment of Bayou Queue de Tortue as this bayou is located in the Mermentau River Basin. Therefore, the reference to LAC 33:IX.1113.B.9 will remain in this TMDL.

Cc: J. Dale Givens
James Brent
Tim Knight
Barbara Romanowsky
Emelise Cormier
Willie Lane, EPA

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2) We agree that there is a probability that the 150 NTU value will be exceeded under certain conditions. However, based on LDEQ's studies which confirm that many sources of turbidity in the bayou are anthropogenic, as well as 20 years of data (1978 - 1998) which demonstrate a critical season based on land use (see Figure 2 of the TMDL), we believe that anthropogenic NPS can be controlled to the point where the 150 NTU guideline value can be adequately met without an additional allowance to natural sources.

3) We appreciate the comment. Assessment procedures for compliance with the 150 NTU guideline recognize a 30% exceedance rate as acceptable. However, setting allowable turbidity levels from sources as 150 NTU *at all times* is a conservative *application* of the guideline as no exceedances of the criterion will be allowed.

4) Upon re-examination, EPA incorrectly listed the exceedance rate as 36%. The TMDL has been corrected to reflect an exceedance rate of 40%, based on an evaluation of available data from the most recent 5 years (21 out of 53 data points exceeded the 150 NTU criterion over the period 1/10/95 - 12/2/98). This has been clarified in the TMDL.

5) We appreciate the comment. However, EPA is required under CWA 303(d) to develop total maximum daily loads for those pollutants which do not meet applicable water quality standards. The level of turbidity in the above-stated water body was found to be in exceedance of the State established guideline and, as such, must be reduced by those amounts described in the TMDL to meet this guideline. EPA anticipates that the state will target nonpoint sources of pollution for treatment under their Nonpoint Source Management Program.

6) The period of time used to determine critical months is apparent in Figure 1, namely, 1978 through 1998. This has been clarified in the caption of Figure 2.

7) The last sentence of paragraph 1, Section 3.5 was ambiguous and has been clarified.
It was not EPA's intent to relate the type of MOS (implicit or explicit) with long term ambient data.

8) Calculations for the reduction percentages have been documented in Section 3.3 of the TMDL.

<u>Vermilion River TMDLs for Dissolved Oxygen and Nitrogen</u>

1) The described correction has been made to the TMDL report.

2) The described correction has been made to the TMDL report.

3) The described correction has been made to the TMDL report.

	4) This TMDL was based on that developed by LDEQ in December 1999 ("1999 Review and Assessment of the 1987 Vermilion River Watershed TMDL for Dissolved Oxygen", see Appendix A in TMDL). In accordance with the conservative model inputs used and LDEQ's best judgment as stated in the previously mentioned document, the overall MOS was estimated to be greater than 10%. 5) The incorrectly labeled chart has been removed from Appendix A and replaced by the correctly labeled chart submitted by LDEQ. References Cited: EPA. 1985. Ambient water quality criteria for mercury - 1984. U.S. Environmental Protection Agency., Washington, D.C., January 1985. EPA 440/5-84-026. EPA. 1995. Guidance for assessing chemical contaminant data for use in fish advisories, volume 1, Fish sampling and analysis, second edition. U.S. Environmental Protection Agency, Washington, D.C., September 1999. EPA 823-R-95-007. EPA. 1997. Mercury study report to congress. United States Environmental Protection Agency, Washington, D.C., December 1997. EPA-452/R-97-003. EPA. 1999. Mercury update: Impact on fish advisories. United states Environmental Protection Agency, Washington, D.C., September 1999. EPA-823-F-99-016. EPA. 2001. Water quality criteria: notice of availability of water quality criterion for the protection of human health: methyl mercury. Federal Register: 66(5):1344-1359. EPA Region 4. 1996. South Florida ecosystem assessment interim report. U.S. Environmental Protection Agency, Region 4, Science and Ecosystem Support Division. December 1996. EPA-904-R-96-008. EPA Region 4. 2000. Total maximum daily load (TMDL) development for total mercury and fish consumption guidelines in the middle and lower Savannah River watershed. U.S. Environmental Protection Agency, Region 4. December 8, 2000 Draft. FDA. 1995. Mercury in fish: Cause for concern? U.S. Food and Drug Administration. FDA Consumer. May 1995. Website: http://vm.cfsan.fda.gov/~dms/mercury.html. LDEQ. 1995. Mercury contaminant levels in Louisiana biota, sediments, and surface waters, Phase I Report. Louisiana Department of Environmental Quality, Baton Rouge, LA. April 1995. NAS. 2000. Toxicological Effects of Methylmercury. National Academy of Sciences, National Academy Press.

May 17, 2000 Ellen Caldwell Water Quality Protection Division U.S. Environmental Protection Agency 1445 Ross Ave. Dallas, TX 75202-2733 Dear Ms. Caldwell: This letter is in response to the notice that appeared in the 4/12/00 edition of the *Federal Register* concerning TMDLs for the Mermentau and Vermilion/Teche river basins. In the table on page 19763 you listed dissolved oxygen as "pollutant" for two segments of the Vermilion River. Since when has dissolved oxygen (D.O.) been considered a pollutant? Unlike a real pollutant, such as fecal coliform, which you have also listed, having more D.O. is better than having less. It is something good, not something bad, and actually help reduce the bad stuff. Including D.O. as part of TMDL is not appropriate. How would you develop a waste load allocation, which is the essence of a TMDL, for a parameter that is not a waste? The intent of a TMDL, for a parameter that is not a waste? The intent of a TMDL is to identify how much of a substance can be tolerated without exceeding the standards. In other words, reduce contributions from various sources so that the stream can achieve attainment. You don't want to reduce oxygen contribution. Sincerely, Donald R. Perander 300 Jackson Lane Middletown, OH 45044	Response: We appreciate the comment and agree that D.O. is not a "pollutant". These waterbodies were listed for D.O. because water quality monitoring data indicated that the State of Louisiana's water quality standard for D.O. was not being met, i.e., the D.O. level was too low to protect aquatic life. We agree that D.O. is something good, not something bad. TMDLs for D.O. typically allocate loads for oxygen demanding pollutants which reduce D.O. in a waterbody. The TMDL identifies necessary load reductions that will ultimately allow the waterbody to meet the State's D.O. standard.